



Product Specification

AU OPTRONICS CORPORATION

() Preliminary Specifications

(V) Final Specifications

Module	13.3" HD Color TFT-LCD
Model Name	B133XW01 V1 (H/W:2A; Dell P/N: XX31G)
Note ()	LED Backlight with driving circuit design

Customer

Date

Checked &
Approved by

Date

Note: This Specification is subject to change without notice.

Approved by

Date

Howard Lee6th Nov, 2009

Prepared by

Vicki Chai6th Nov, 2009**NBBU Marketing Division /
AU Optronics corporation**



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Record of Revision

Version and Date	Page	Old description	New Description	Remark
0.1 2009/07/03	All	First Edition for Customer		
0.2 2009/07/14	14	Signal electrical characteristics without $ V_{ID} $	Signal electrical characteristics with $ V_{ID} $	
	15	N/A	Adding Backlight input signal characteristics	
0.3 2009/08/13	1	TBD	Dell P/N: XX31G	
	27	TBD	Adding shipping label	
	29-32	TBD	Adding EDID for PT build	
1.0 2009/11/6	1	Preliminary specification	Final specification	
	5, 6	Luminance = 200typ, 170 min	Luminance = 200typ, 180 min	
	27	shipping label for PT-build	shipping label for A00	
	29-32	EDID for PT build	EDID for A00	



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1. Handling Precautions

- 1) Since front polarizer is easily damaged, pay attention not to scratch it.
- 2) Be sure to turn off power supply when inserting or disconnecting from input connector.
- 3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
- 4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
- 5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
- 6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.
- 7) Do not open nor modify the Module Assembly.
- 8) Do not press the reflector sheet at the back of the module to any directions.
- 9) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.
- 10) After installation of the TFT Module into an enclosure (Notebook PC Bezel, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.
- 11) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.
- 12) Disconnecting power supply before handling LCD modules, it can prevent electric shock, DO NOT TOUCH the electrode parts, cables, connectors and LED circuit part of TFT module that a LED light bar build in as a light source of back light unit. It can prevent electrostatic breakdown.



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2. General Description

B133XW01 V1 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel, a driver circuit, and LED backlight system. The screen format is intended to support the High Definition (1366(H) x 768(V)) screen and 262k colors (RGB 6-bits data driver) with LED backlight driving circuit. All input signals are LVDS interface compatible.

B133XW01 V1 is designed for a display unit of notebook style personal computer and industrial machine.

2.1 General Specification

The following items are characteristics summary on the table at 25 °C condition:

Items	Unit	Specifications			
Screen Diagonal	[mm]	336.6 (13.25W")			
Active Area	[mm]	293.42 X 164.97			
Pixels H x V		1366x3(RGB) x 768			
Pixel Pitch	[mm]	0.2148X0.2148			
Pixel Format		R.G.B. Vertical Stripe			
Display Mode		Normally White			
White Luminance (ILED=20mA) (Note: ILED is LED current)	[cd/m ²]	200 typ. (5 points average) 180 min. (5 points average)			
Luminance Uniformity		1.25 max. (5 points)			
Contrast Ratio		400 typ			
Response Time	[ms]	8 typ / 16 Max			
Nominal Input Voltage VDD	[Volt]	+3.3 typ.			
Power Consumption	[Watt]	3.9W max			
Weight	[Grams]	290 max.			
Physical Size	[mm]		L	W	T
		Max	306.8	189.25	3.6
		Typical	-	-	-
		Min	-	-	-
Electrical Interface		1 channel LVDS			
Glass thickness	[mm]	0.5			
Surface Treatment		Anti-Glare, Hardness 3H			
Support Color		262K colors (RGB 6-bit)			



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Temperature Range		
Operating	[°C]	0 to +50
Storage (Non-Operating)	[°C]	-20 to +60
RoHS Compliance		RoHS Compliance

2.2 Optical Characteristics

The optical characteristics are measured under stable conditions at 25°C (Room Temperature) :

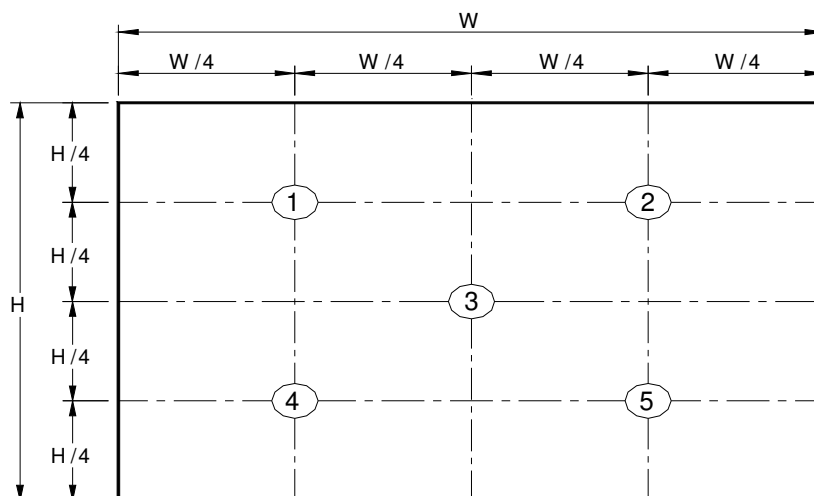
Item	Unit	Conditions	Min.	Typ.	Max.	Note
White Luminance (ILED=20mA)	[cd/m ²]	5 points average	180	200	-	1, 4, 5.
Viewing Angle	[degree] [degree]	Horizontal (Right)	-	45	-	4, 9
		CR = 10 (Left)	-	45	-	
	[degree] [degree]	Vertical (Upper)	-	15	-	
		CR = 10 (Lower)	-	35	-	
Luminance Uniformity		5 Points	-	-	1.25	1, 3, 4
		13 Points	-	-	1.5	2, 3, 4
CR: Contrast Ratio			300	400	-	4, 6
Cross talk	%				4	4, 7
Response Time	[msec]	Rising + Falling	-	8	16	
Chromaticity of color Coordinates (CIE 1931)		Red x	0.555	0.585	0.615	4, 9
		Red y	0.305	0.335	0.365	
		Green x	0.300	0.330	0.360	
		Green y	0.545	0.575	0.605	
		Blue x	0.125	0.155	0.185	
		Blue y	0.100	0.130	0.160	
		White x	0.283	0.313	0.343	
		White y	0.299	0.329	0.359	



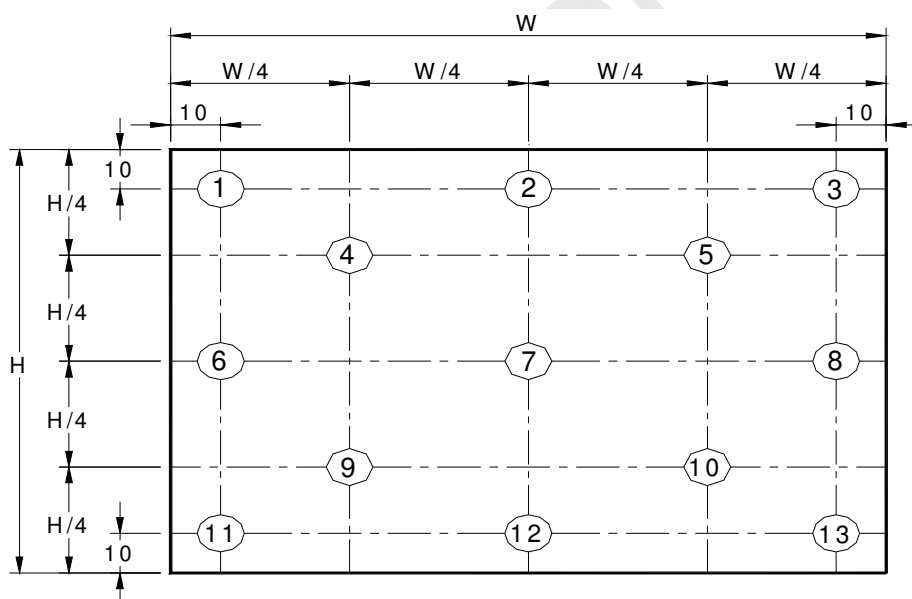
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Note 1: 5 points position (Ref: Active area)



Note 2: 13 points position (Ref: Active area)



Note 3: The luminance uniformity of 5 or 13 points is defined by dividing the maximum luminance values by the minimum test point luminance

$$\delta_{W5} = \frac{\text{Maximum Brightness of five points}}{\text{Minimum Brightness of five points}}$$

$$\delta_{W13} = \frac{\text{Maximum Brightness of thirteen points}}{\text{Minimum Brightness of thirteen points}}$$

Note 4: Measurement method

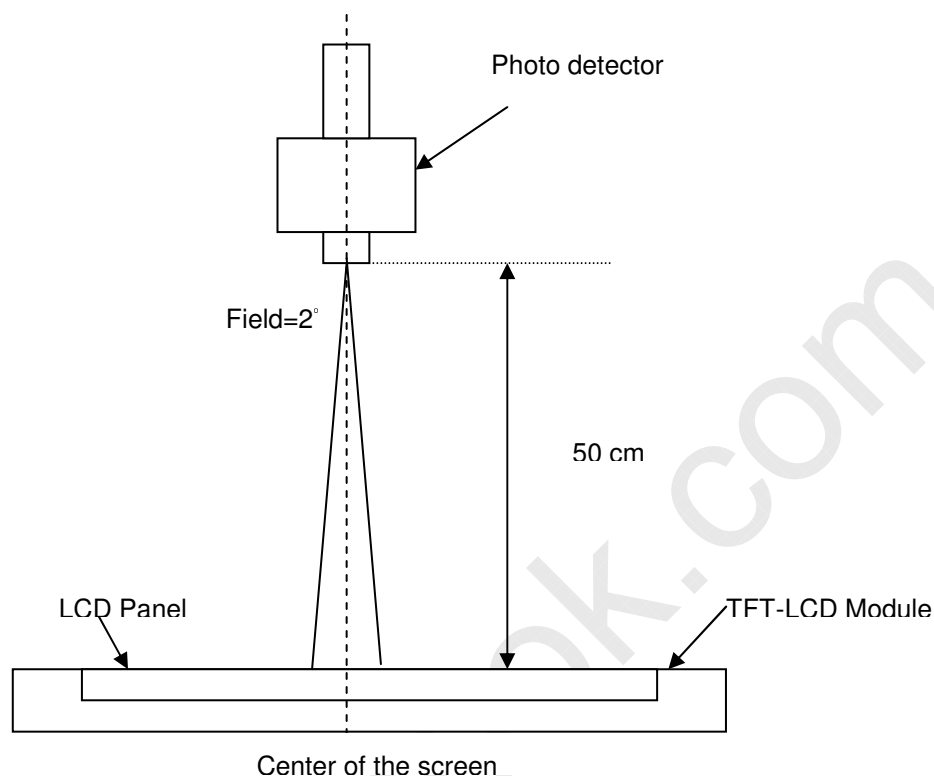
The LCD module should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting



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Backlight for 30 minutes in a stable, windless and dark room.



Note 5 : Definition of Average Luminance of White (Y_L):

Measure the luminance of gray level 63 at 5 points , $Y_L = [L(1) + L(2) + L(3) + L(4) + L(5)] / 5$

$L(x)$ is corresponding to the luminance of the point X at Figure in Note (1).

Note 6 : Definition of contrast ratio:

Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "White" state}}{\text{Brightness on the "Black" state}}$$

Note 7 : Definition of Cross Talk (CT)

$$CT = |Y_B - Y_A| / Y_A \times 100 (\%)$$

Where

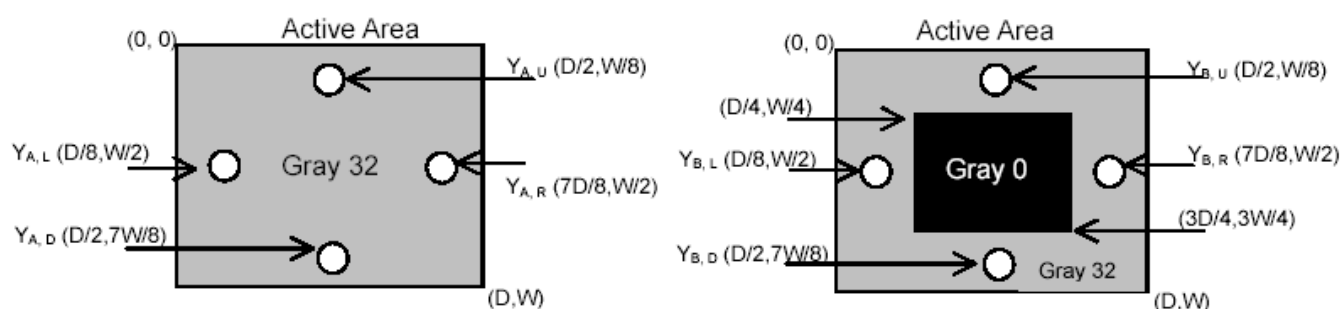
Y_A = Luminance of measured location without gray level 0 pattern (cd/m^2)

Y_B = Luminance of measured location with gray level 0 pattern (cd/m^2)



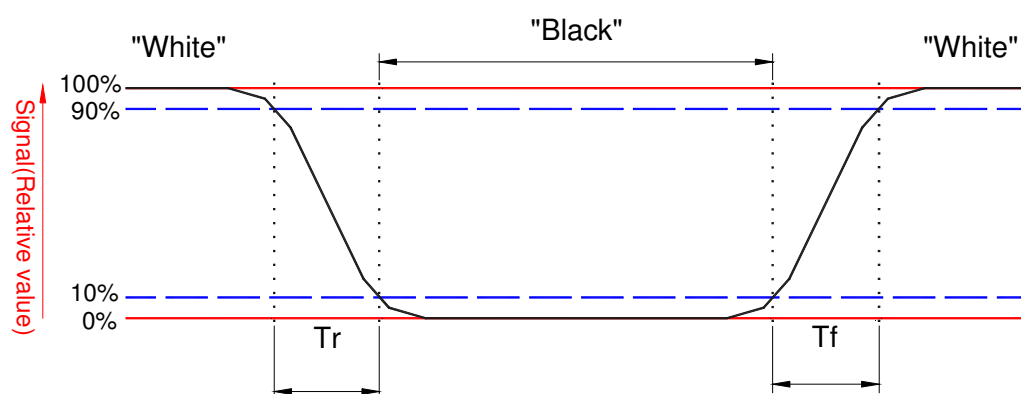
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Note 8: Definition of response time:

The output signals of BM-7 or equivalent are measured when the input signals are changed from "Black" to "White" (falling time) and from "White" to "Black" (rising time), respectively. The response time interval between the 10% and 90% of amplitudes. Refer to figure as below.



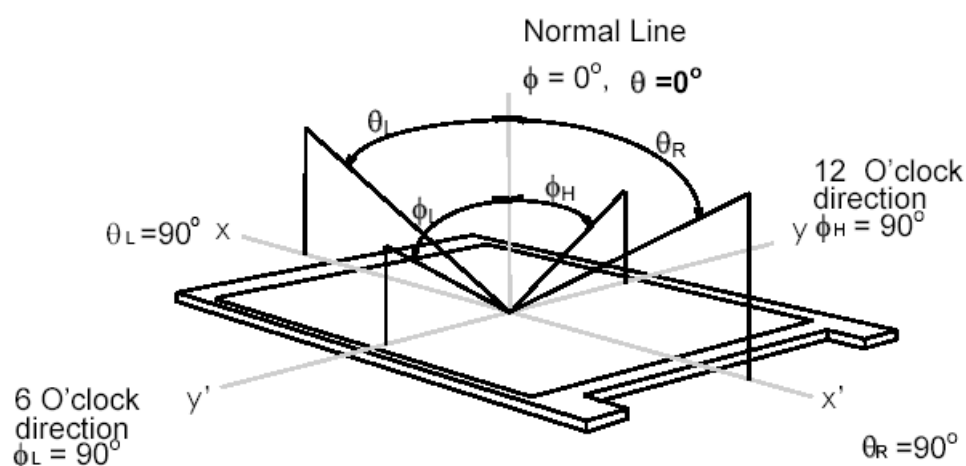


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Note 9. Definition of viewing angle

Viewing angle is the measurement of contrast ratio ≥ 10 , at the screen center, over a 180° horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as follows; 90° (θ) horizontal left and right and 90° (Φ) vertical, high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated about its center to develop the desired measurement viewing angle.



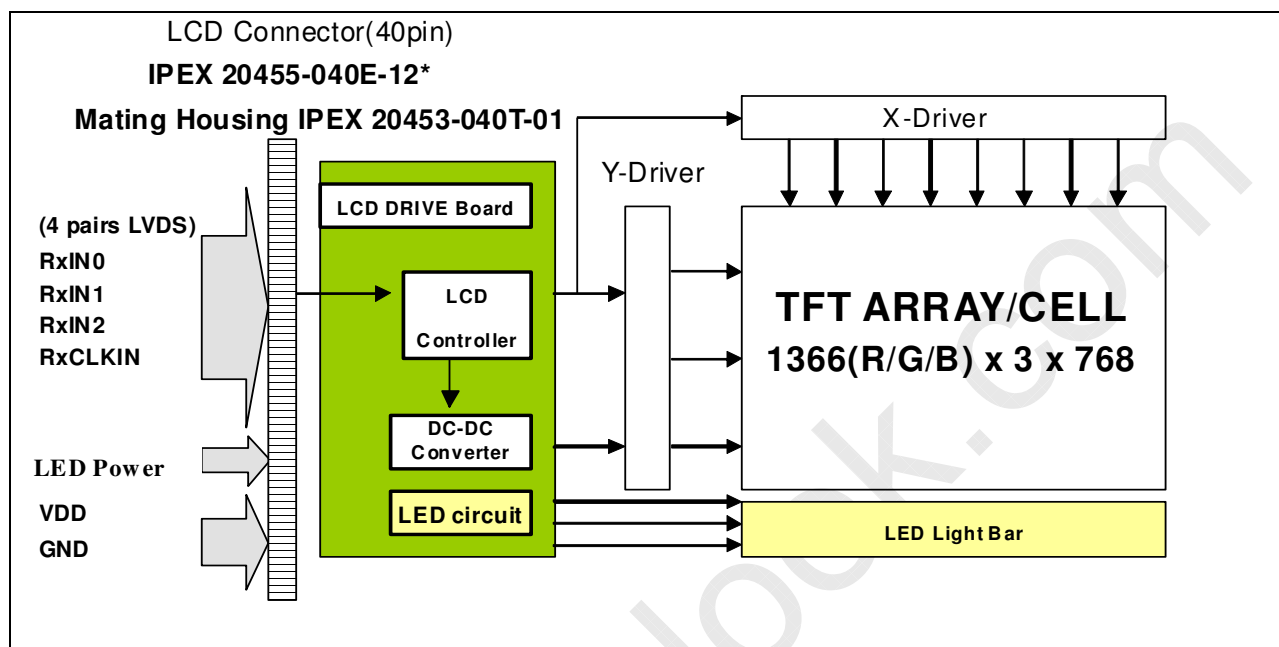


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3. Functional Block Diagram

The following diagram shows the functional block of the 13.3 inches wide Color TFT/LCD Module:





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4. Absolute Maximum Ratings

An absolute maximum rating of the module is as following:

4.1 Absolute Ratings of TFT LCD Module

Item	Symbol	Min	Max	Unit	Conditions
Logic/LCD Drive Voltage	Vin	-0.3	+4.0	[Volt]	Note 1,2

4.2 Absolute Ratings of Environment

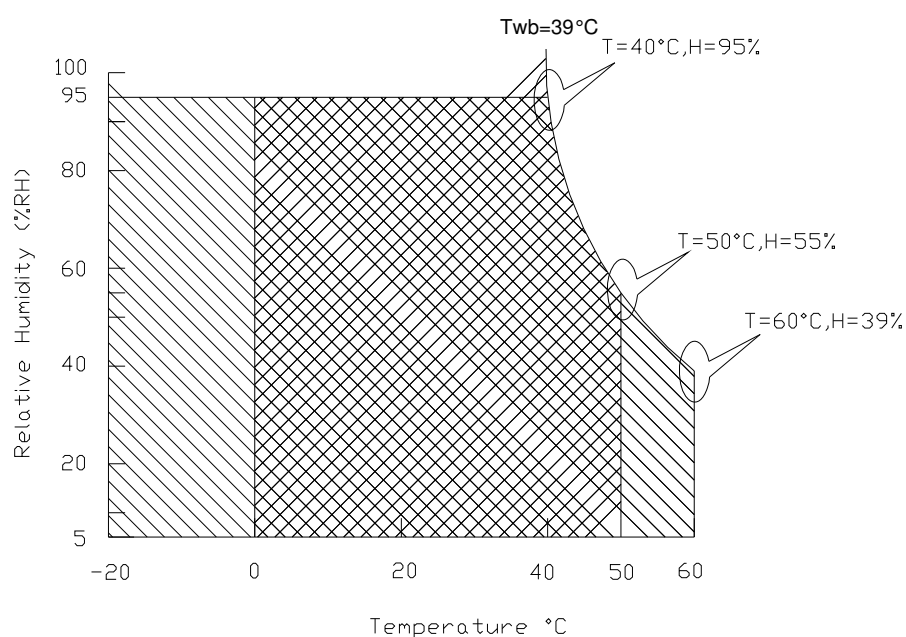
Item	Symbol	Min	Max	Unit	Conditions
Operating Temperature	TOP	0	+50	[°C]	Note 4
Operation Humidity	HOP	10	90	[%RH]	Note 4
Storage Temperature	TST	-20	+60	[°C]	Note 4
Storage Humidity	HST	10	90	[%RH]	Note 4

Note 1: At Ta (25°C)

Note 2: Permanent damage to the device may occur if exceed maximum values

Note 3: LED specification refer to section 5.2

Note 4: For quality performance, please refer to AUO IIS (Incoming Inspection Standard).



Operating Range

Storage Range +



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5. Electrical Characteristics

5.1 TFT LCD Module

5.1.1 Power Specification

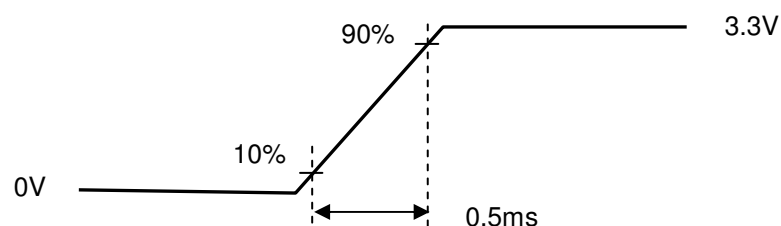
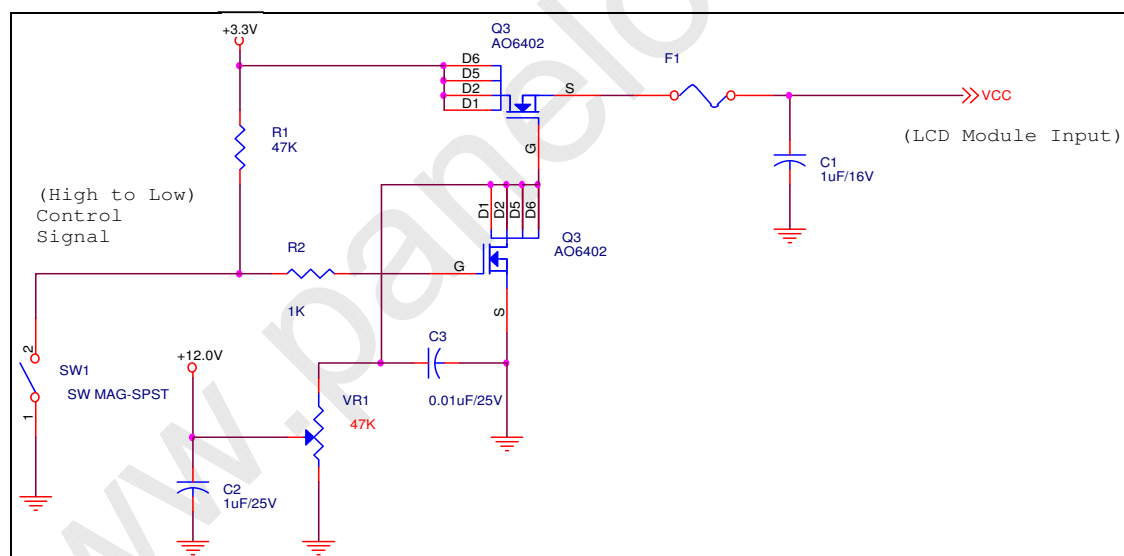
Input power specifications are as follows;

Symble	Parameter	Min	Typ	Max	Units	Note
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[Volt]	
PDD	VDD Power	-	-	0.9	[Watt]	Note 1/2
IDD	IDD Current	-	-	300	[mA]	Note 1/2
IRush	Inrush Current	-	-	2000	[mA]	Note 3
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	-	-	100	[mV] p-p	

Note 1 : Maximum Measurement Condition : Black Pattern

Note 2 : Typical Measurement Condition: Mosaic Pattern

Note 3 : Measure Condition



Vin rising time



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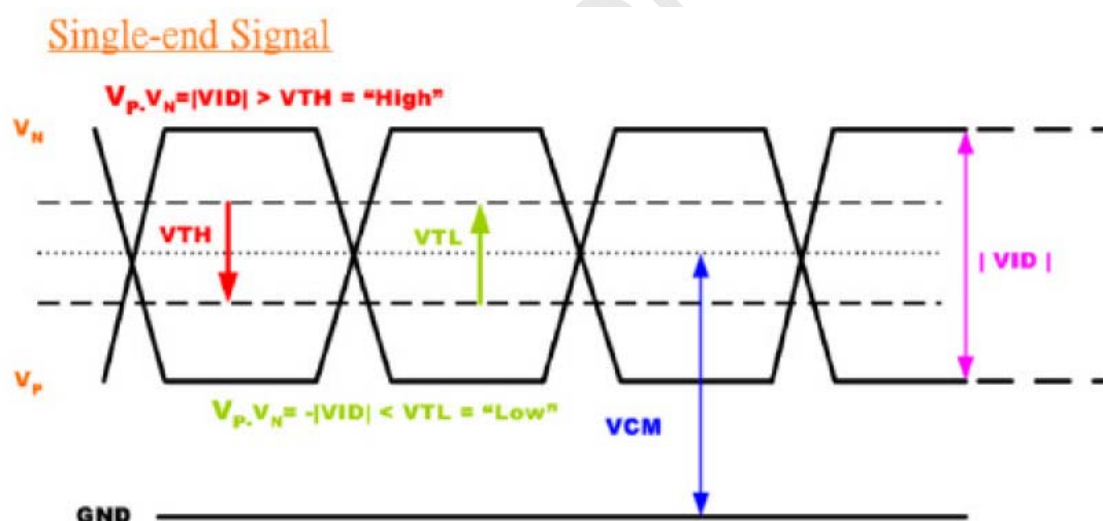
5.1.2 Signal Electrical Characteristics

Input signals shall be low or High-impedance state when VDD is off.

Signal electrical characteristics are as follows;

Parameter	Condition	Min	Max	Unit
Vth	Differential Input High Threshold ($V_{cm}=+1.2V$)	-	100	[mV]
Vtl	Differential Input Low Threshold ($V_{cm}=+1.2V$)	-100	-	[mV]
$ V_{ID} $	Differential Input Voltage	100	600	[mV]
Vcm	Differential Input Common Mode Voltage	1.125	1.375	[V]

Note: LVDS Signal Waveform





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5.2 Backlight Unit

5.2.1 LED parameter guideline for LED driving selection

Parameter	Symbol	Min	Typ	Max	Units	Condition
LED Forward Voltage	V_F	3.0	3.2	3.4	[Volt]	(Ta=25°C)
LED Forward Current	I_F	-	18.2	30	[mA]	(Ta=25°C)
LED Power consumption	P_{LED}	-	-	3.0	[Watt]	(Ta=25°C) Note 1
LED Life-Time	N/A	15000	-	-	Hour	(Ta=25°C) $I_F=20\text{ mA}$ Note 2

Note 1: Calculator value for reference $P_{LED} = I_F \times V_F \times LED(Qty)$

Note 2: The LED life-time define as the estimated time to 50% degradation of minimum specification luminance.

5.2.2 Backlight input signal characteristics

Parameter	Symbol	Min	Typ	Max	Units	Remark
LED Power Supply	V_{LED}	6.0	12.0	21.0	[Volt]	Define as Connector Interface (Ta=25°C)
LED Enable Input High Level	V_{LED_EN}	2.5	-	5.5	[Volt]	
LED Enable Input Low Level		-	-	0.8	[Volt]	
PWM Logic Input High Level	V_{PWM_EN}	2.5	-	5.5	[Volt]	
PWM Logic Input Low Level		-	-	0.8	[Volt]	
PWM Input Frequency	F_{PWM}	100	200	20K	Hz	
PWM Duty Ratio	Duty	5	--	100	%	



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6. Signal Characteristic

6.1 Pixel Format Image

Following figure shows the relationship of the input signals and LCD pixel format.

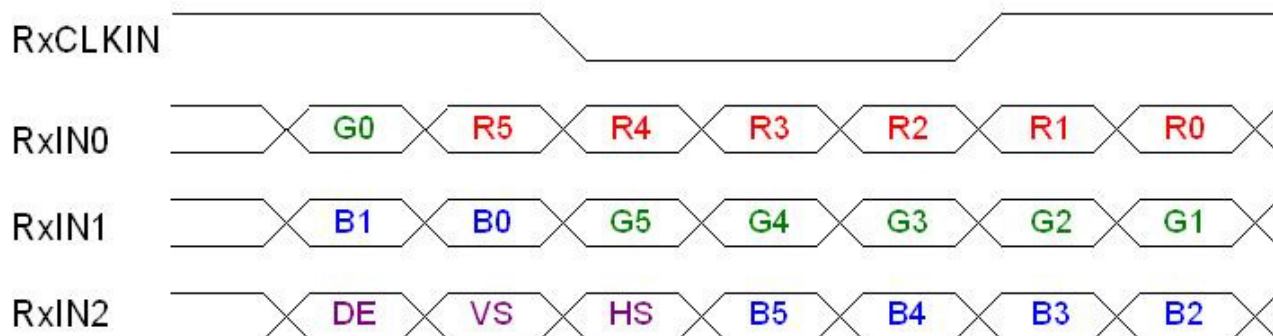
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6.2 The input data format



Signal Name	Description	
R5 R4 R3 R2 R1 R0	Red Data 5 (MSB) Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0 (LSB) Red-pixel Data	Red-pixel Data Each red pixel's brightness data consists of these 6 bits pixel data.
G5 G4 G3 G2 G1 G0	Green Data 5 (MSB) Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0 (LSB) Green-pixel Data	Green-pixel Data Each green pixel's brightness data consists of these 6 bits pixel data.
B5 B4 B3 B2 B1 B0	Blue Data 5 (MSB) Blue Data 4 Blue Data 3 Blue Data 2 Blue Data 1 Blue Data 0 (LSB) Blue-pixel Data	Blue-pixel Data Each blue pixel's brightness data consists of these 6 bits pixel data.
RxCLKIN	Data Clock	The typical frequency is 69.3 MHZ.. The signal is used to strobe the pixel data and DE signals. All pixel data shall be valid at the falling edge when the DE signal is high.
DE	Display Timing	This signal is strobed at the falling edge of RxCLKIN. When the signal is high, the pixel data shall be valid to be displayed.
VS	Vertical Sync	The signal is synchronized to RxCLKIN .
HS	Horizontal Sync	The signal is synchronized to RxCLKIN .

Note: Output signals from any system shall be low or High-impedance state when VDD is off.



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6.3 Integration Interface and Pin Assignment

LVDS is a differential signal technology for LCD interface and high speed data transfer device.

PIN#	Signal Name	Description
1	DIAG_LOOP	Diag pin for Dell testing. Pin1&34 must be connected together on the PCBA board
2	VDD	PowerSupply,3.3V(typical)
3	VDD	PowerSupply,3.3V(typical)
4	VEEDID	DDC 3.3Vpower
5	TEST	Panel Self Test-BIST
6	ClkEEDID	DDC Clock
7	DATAEEDID	DDC Data
8	Rin0-	-LVDS differential data input(R0-R5,G0)(odd pixels)
9	Rin0+	+LVDS differential data input(R0-R5,G0)(odd pixels)
10	VSS	Ground-Shield
11	Rin1-	-LVDS differential data input(G1-G5,B0-B1)(odd pixels)
12	Rin1+	+LVDS differential data input(G1-G5,B0-B1)(odd pixels)
13	VSS	Ground-Shield
14	Rin2-	-LVDS differential data input(B2-B5,HS,VS,DE)(odd pixels)
15	Rin2+	+LVDS differential data input(B2-B5,HS,VS,DE)(odd pixels)
16	VSS	Ground-Shield
17	ClkIN-	-LVDS differential clock input(odd pixels)
18	ClkIN+	+LVDS differential clock input(odd pixels)
19	VSS	Ground-Shield
20	NC	No Connection (Reserve)
21	NC	No Connection (Reserve)
22	GND	Ground-Shield
23	NC	No Connection (Reserve)
24	NC	No Connection (Reserve)
25	GND	Ground-Shield
26	NC	No Connection (Reserve)
27	NC	No Connection (Reserve)
28	GND	Ground-Shield
29	NC	No Connection (Reserve)
30	NC	No Connection (Reserve)
31	VSSLED	LED Ground
32	VSSLED	LED Ground
33	VSSLED	LED Ground
34	DIAG_LOOP	Diag pin for Dell testing.



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		Pin1&34 must be connected together on the PCBA board
35	PWM	System PWM Signal Input
36	LED_EN	LED enable pin
37	NC	No Connection (Reserve)
38	VLED	LED Power Supply
39	VLED	LED Power Supply
40	VLED	LED Power Supply



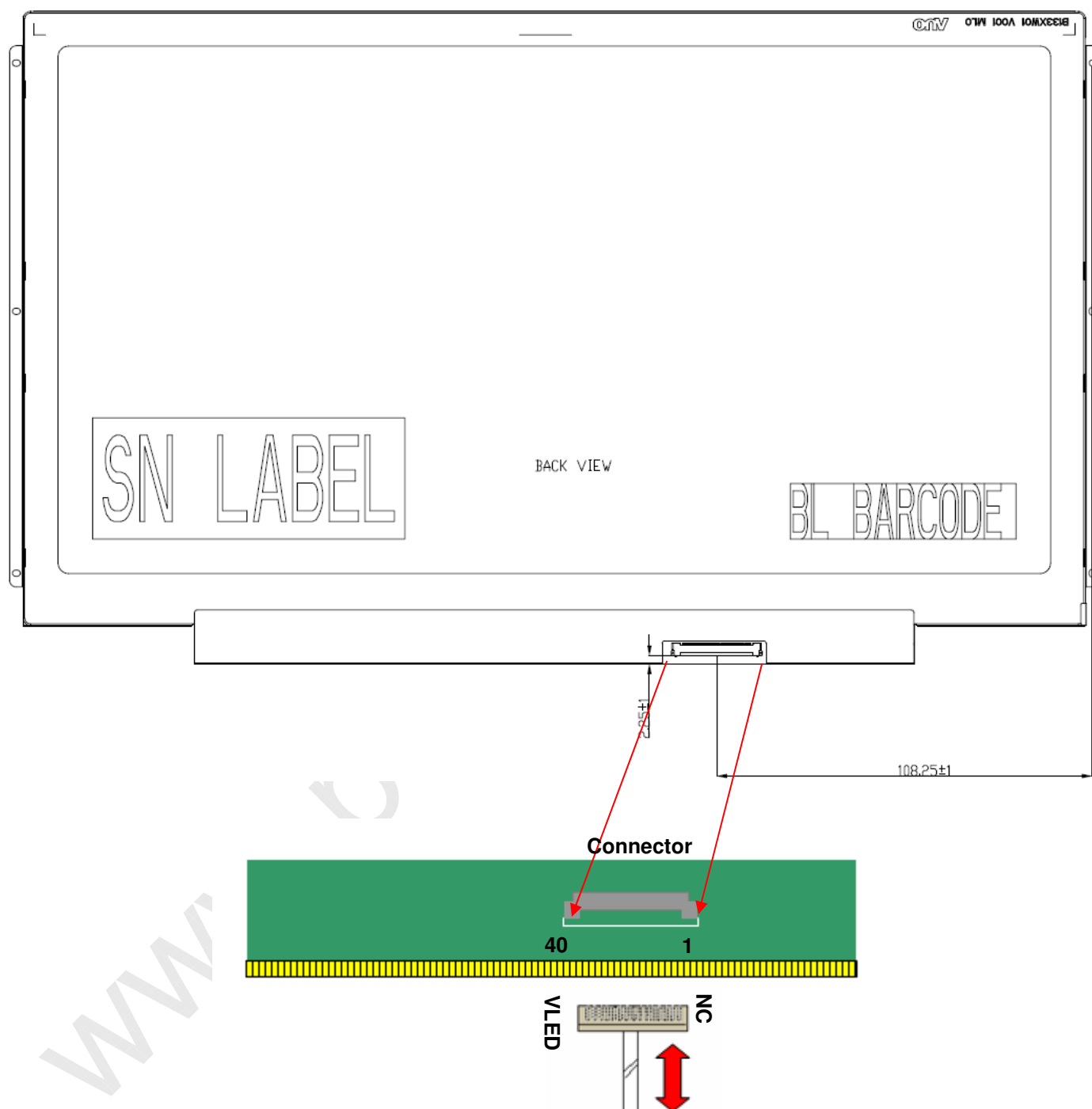
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Note1: Viewing from rear of the module

Note2: Start from right side

Note3: Input signals shall be low or High-impedance state when VDD is off.





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6.4 Interface Timing

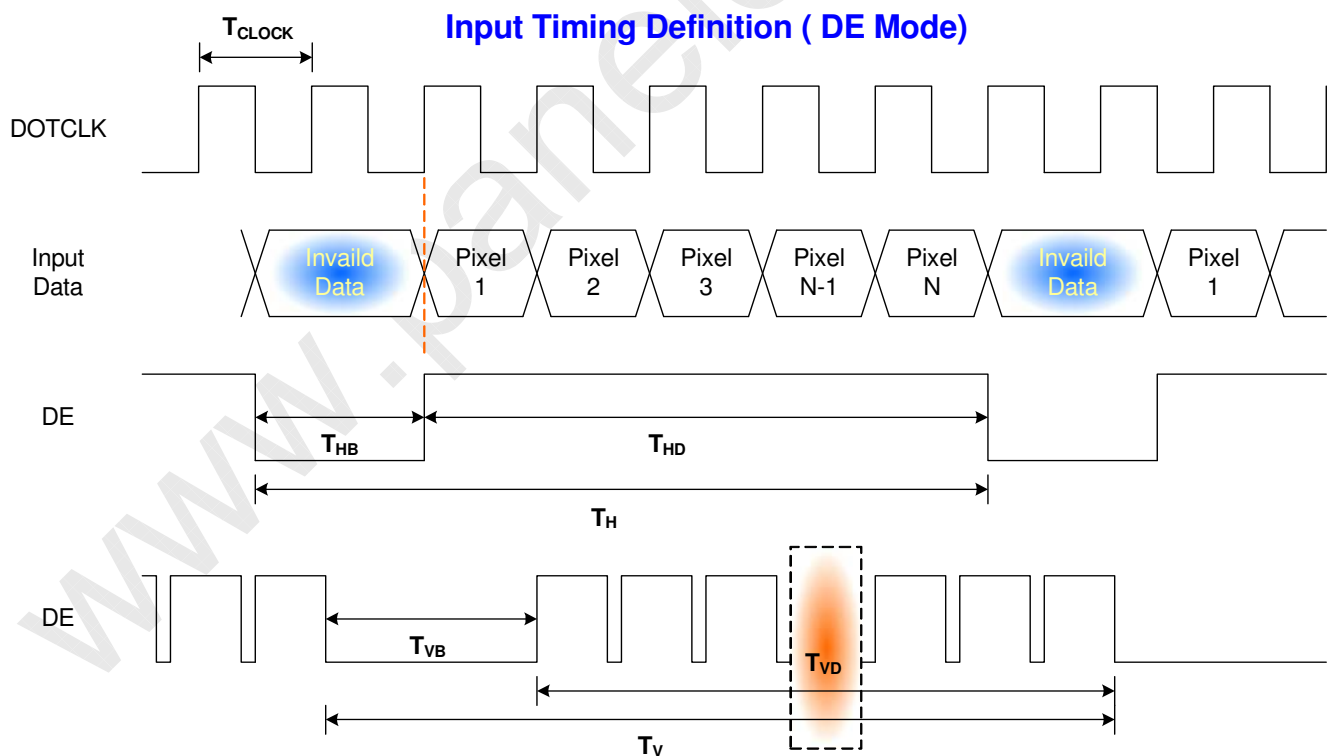
6.4.1 Timing Characteristics

Basically, interface timings should match the 1366x768 /60Hz manufacturing guide line timing.

Parameter		Symbol	Min.	Typ.	Max.	Unit
Frame Rate		-	50	60	-	Hz
Clock frequency		$1/T_{\text{Clock}}$	-	69.3	-	MHz
Vertical Section	Period	T_V	780	794	-	T_{Line}
	Active	T_{VD}		768	-	
	Blanking	T_{VB}	12	25	-	
Horizontal Section	Period	T_H	1426	1456	-	T_{Clock}
	Active	T_{HD}	-	1366	-	
	Blanking	T_{HB}	60	90	-	

Note : DE mode only

6.4.2 Timing diagram

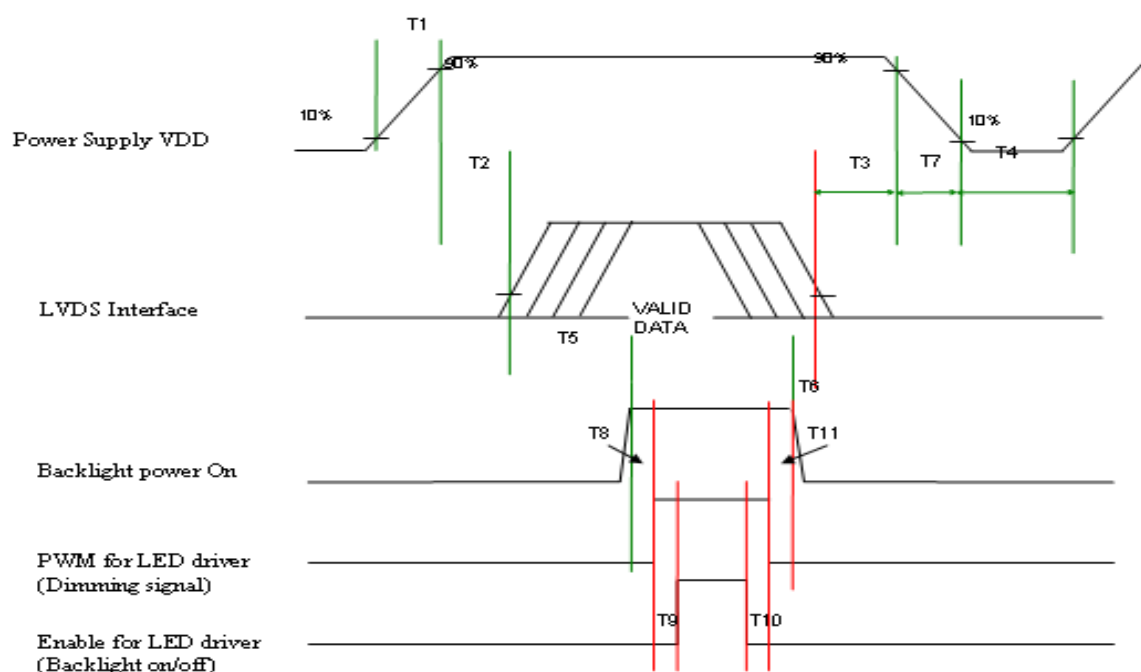




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6.5 Power ON/OFF Sequence



Parameter	Value			Units
	Min.	Typ.	Max.	
T1	0.5	-	10	(ms)
T2	5	-	50	(ms)
T3	0.5	-	50	(ms)
T4	400	-	-	(ms)
T5	200	-	-	(ms)
T6	200	-	-	(ms)
T7	0	-	10	(ms)
T8	10	---	---	(ms)
T9	10	---	---	(ms)
T10	0	---	---	(ms)
T11	10	---	---	(ms)



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7. Connector Description

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

7.1 TFT LCD Module

Connector Name / Designation	For Signal Connector
Manufacturer	IPEX or compatible
Type / Part Number	IPEX 20455-040E-12* or compatible
Mating Housing/Part Number	IPEX 20453-040T-01 or compatible



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8. Vibration and Shock Test

8.1 Vibration Test

Test Spec:

- Test method: Non-Operation
- Acceleration: 1.5 G
- Frequency: 10 - 500Hz Random
- Sweep: 30 Minutes each Axis (X, Y, Z)

8.2 Shock Test Spec:

Test Spec:

- Test method: Non-Operation
- Acceleration: 220 G , Half sine wave
- Active time: 2 ms
- Pulse: X,Y,Z .one time for each side



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9. Reliability

Items	Required Condition	Note
Temperature Humidity Bias	Ta= 40℃, 90%RH, 300h	
High Temperature Operation	Ta= 50℃, Dry, 300h	
Low Temperature Operation	Ta= 0℃, 300h	
High Temperature Storage	Ta= 60℃, 300h	
Low Temperature Storage	Ta= -20℃, 300h	
Thermal Shock Test	Ta=-20℃to 60℃, Duration at 30 min, 100 cycles	
ESD	Contact : ±8 KV Air : ±15 KV	Note 1

Note1: According to EN 61000-4-2 , ESD class B: Some performance degradation allowed. No data lost
. Self-recoverable. No hardware failures.

Remark: MTBF (Excluding the LED): 30,000 hours with a confidence level 90%



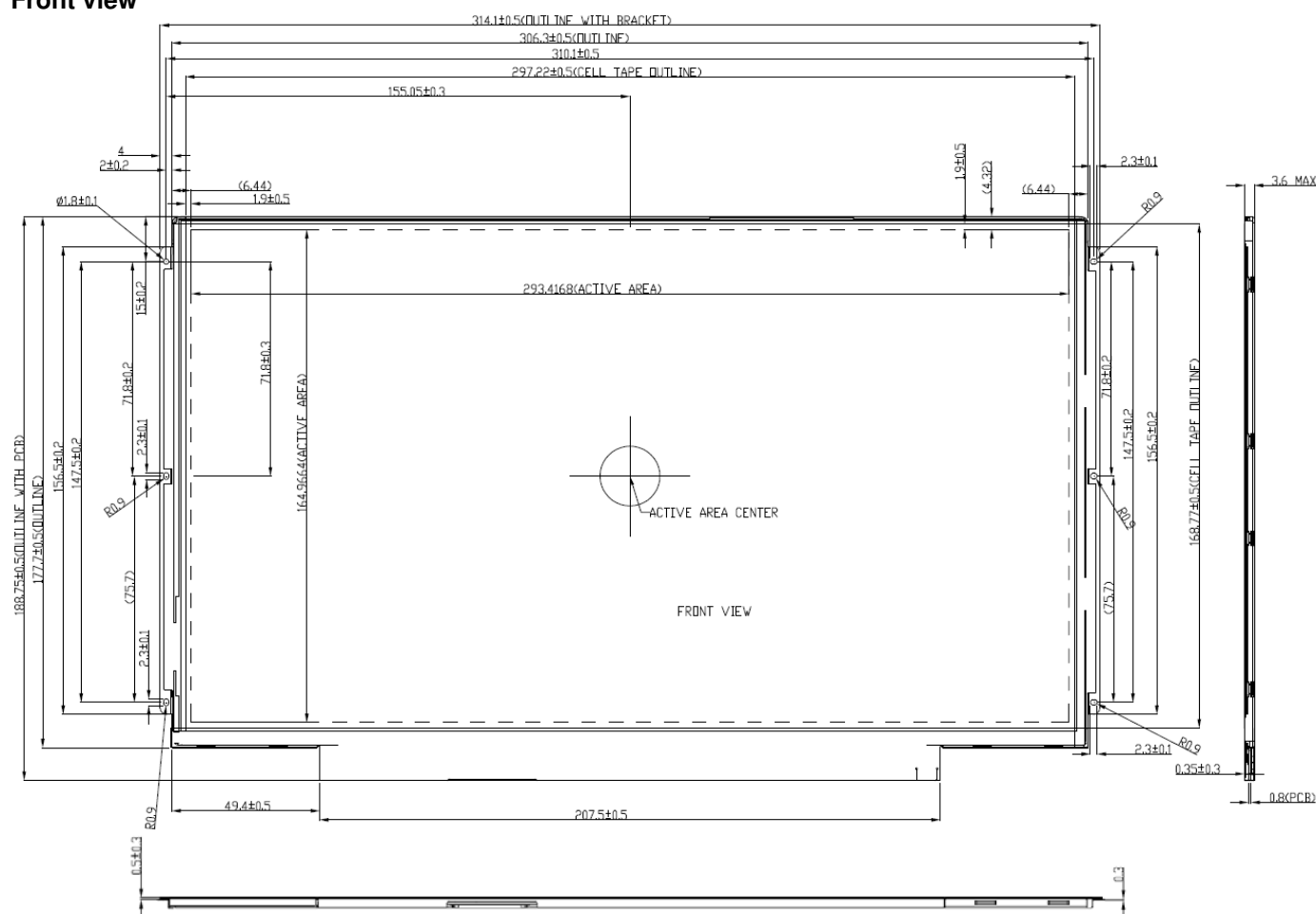
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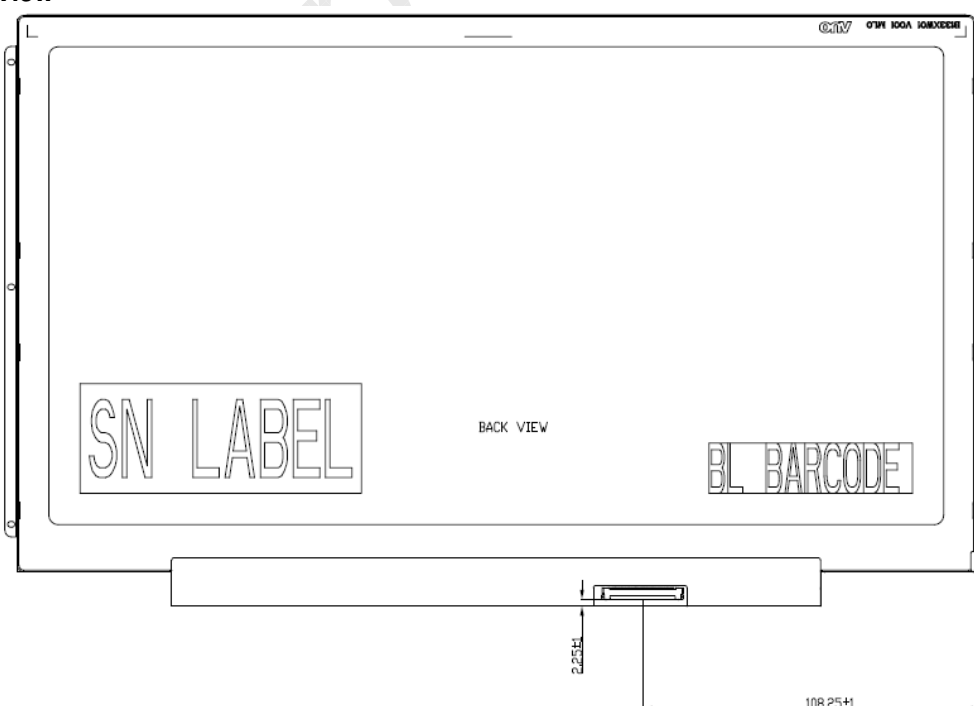
10. Mechanical Characteristics

10.1 LCM Outline Dimension

Front view



Rear view



Note: Prevention IC damage, IC positions not allowed any overlap over these areas.



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11. Shipping and Package

11.1 Shipping Label Format

 *XXXXXXXXXXXX-XXXXXX	Manufactured YY/WW Model No: B133XW01 V1 AU Optronics MADE IN CHINA (S01)	 E204356	 RoHS
 CN - 0XX31G -72090- 85C-01HE- A00 Made In China DP/N 0XX31G	H/W: 2A F/W:1		

Build Name(s):	PPID Revision Code(s):
Sub System Test (SST) Working Sample (WS) ENG 2	X00, X01, X02, ..., X0n
Product Test (PT) Engineering Sample (ES) ENG 3	X10, X11, X12, ..., X1n
System Test (ST) Customer Sample (CS) ENG 4	X20, X21, X22, ... X2n
X-Build (XB) Mass Production (MP) ENG 5	A00, A01, A02, ... A0n

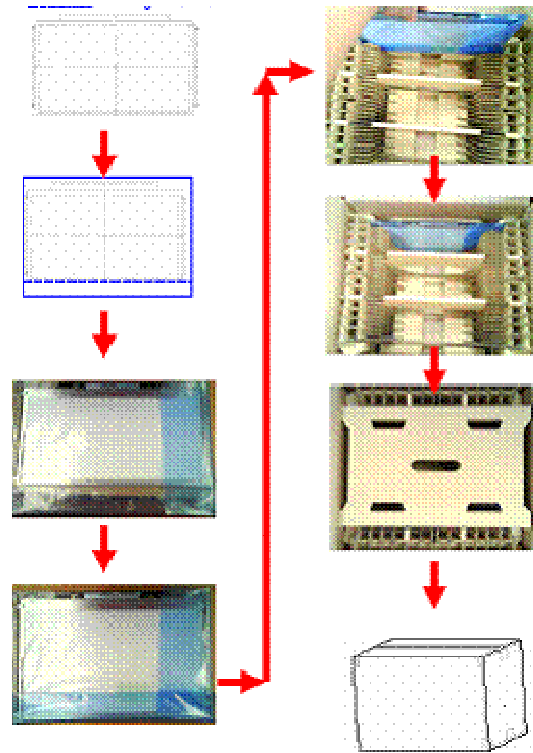


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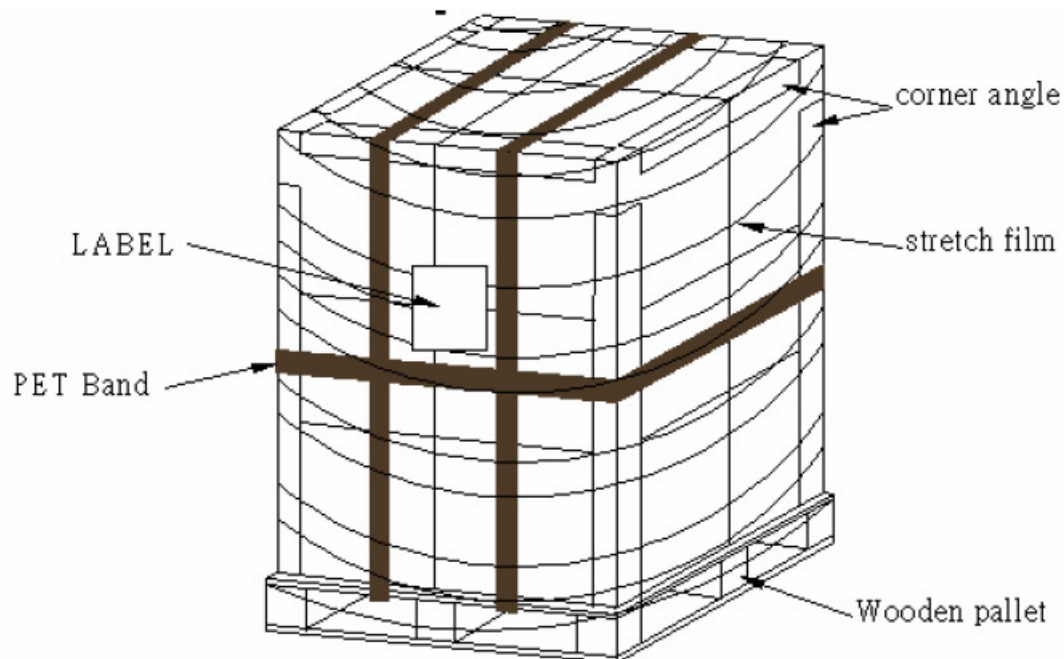
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11.2 Carton package

The outside dimension of carton: 437 (L) mm x 359 (W) mm x 285 (H) mm



11.3 Shipping package of palletizing sequence





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12. Appendix: EDID description

	Byte	Field Name and Comments	Value	Value	Value
	(hex)		(hex)	(binary)	(DEC)
Header	0	Header	00	00000000	0
	1	Header	FF	11111111	255
	2	Header	FF	11111111	255
	3	Header	FF	11111111	255
	4	Header	FF	11111111	255
	5	Header	FF	11111111	255
	6	Header	FF	11111111	255
	7	Header	00	00000000	0
Vendor / Product EDID Version	8	EISA manufacture code = 3 Character ID	06	00000110	6
	9	EISA manufacture code (Compressed ASCII)	AF	10101111	175
	0A	Panel Supplier Reserved – Product Code	2C	00101100	44
	0B	Panel Supplier Reserved – Product Code	11	00010001	17
	0C	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000	0
	0D	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000	0
	0E	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000	0
	0F	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000	0
	10	Week of manufacture	01	00000001	1
	11	Year of manufacture	12	00010010	18
	12	EDID structure version # = 1	01	00000001	1
	13	EDID revision # = 3	03	00000011	3
Display Parameters	14	Video I/P definition = Digital I/P (90 (6-bit) or A0 (8-Bit))	90	10010000	144
	15	Max H image size = ?? cm(Rounded to cm)	1D	00011101	29
	16	Max V image size = ?? cm(Rounded to cm)	10	00010000	16
	17	Display gamma = (gamma ×100)-100 = Example: (2.2×100) – 100 = 120	78	01111000	120
	18	Feature support (no DPMS, Active off, RGB, timing BLK 1) ==> fix=0A	0A	00001010	10
Panel Color Coordinates	19	Red/Green Low bit (RxRy/GxGy)	F9	11111001	249
	1A	Blue/White Low bit (BxBY/WxWy)	D5	11010101	213
	1B	Red X Rx = 0.???	95	10010101	149
	1C	Red Y Ry = 0.???	55	01010101	85
	1D	Green X Rx = 0.???	54	01010100	84
	1E	Green Y Ry = 0.???	93	10010011	147
	1F	Blue X Rx = 0.???	27	00100111	39
	20	Blue Y Ry = 0.???	21	00100001	33
	21	White X Rx = 0.???	50	01010000	80
	22	White Y Ry = 0.???	54	01010100	84
Established Timings	23	Established timings 1 (00h if not used)	00	00000000	0
	24	Established timings 2 (00h if not used)	00	00000000	0
	25	Manufacturer's timings (00h if not used)	00	00000000	0
Standard Timing ID	26	Standard timing ID1 (01h if not used)	01	00000001	1
	27	Standard timing ID1 (01h if not used)	01	00000001	1



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	28	Standard timing ID2 (01h if not used)	01	00000001	1
	29	Standard timing ID2 (01h if not used)	01	00000001	1
	2A	Standard timing ID3 (01h if not used)	01	00000001	1
	2B	Standard timing ID3 (01h if not used)	01	00000001	1
	2C	Standard timing ID4 (01h if not used)	01	00000001	1
	2D	Standard timing ID4 (01h if not used)	01	00000001	1
	2E	Standard timing ID5 (01h if not used)	01	00000001	1
	2F	Standard timing ID5 (01h if not used)	01	00000001	1
	30	Standard timing ID6 (01h if not used)	01	00000001	1
	31	Standard timing ID6 (01h if not used)	01	00000001	1
	32	Standard timing ID7 (01h if not used)	01	00000001	1
	33	Standard timing ID7 (01h if not used)	01	00000001	1
	34	Standard timing ID8 (01h if not used)	01	00000001	1
	35	Standard timing ID8 (01h if not used)	01	00000001	1
Timing Descriptor #1	36	Pixel Clock/10,000 (LSB)	12	00010010	18
	37	Pixel Clock/10,000 (MSB)	1B	00011011	27
	38	Horizontal Active = ??? pixels (lower 8 bits)	56	01010110	86
	39	Horizontal Blanking (Thbp) = 320 pixels (lower 8 bits)	5A	01011010	90
	3A	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000	80
	3B	Vertical Active = ??? lines	00	00000000	0
	3C	Vertical Blanking (Tvbp) = ?? lines (DE Blanking typ. for DE only panels)	19	00011001	25
	3D	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	30	00110000	48
	3E	Horizontal Sync, Offset (Thfp) = ?? pixels	30	00110000	48
	3F	Horizontal Sync, Pulse Width = ??? pixels	20	00100000	32
	40	Vertical Sync, Offset (Tvfp) = ? lines Sync Width = ? lines	36	00110110	54
	41	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000	0
	42	Horizontal Image Size = ??? mm	25	00100101	37
	43	Vertical image Size = ??? mm	A4	10100100	164
	44	Horizontal Image Size / Vertical image size	10	00010000	16
	45	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000	0
	46	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000	0
Timing Descriptor #2 (=Timing Descriptor #1)	47	Bit[7] 0: Non-interlace, 1: Interlace Bit[6:5] 00: Normal display, no strero, see VESA EDID Spec 1.3 Bit[4:3] 00: Analog composite, 01: Bipolar analog composite, 10: Digital composite, 11: Digital separate Bit[2:1] : The int	1A	00011010	26
	48	Pixel Clock/10,000 (LSB)	0C	00001100	12
	49	Pixel Clock/10,000 (MSB)	12	00010010	18
	4A	Horizontal Active = xxxx pixels (lower 8 bits)	56	01010110	86
	4B	Horizontal Blanking (Thbp) = xxxx pixels (lower 8 bits)	5A	01011010	90
	4C	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000	80
	4D	Vertical Active = xxxx lines	00	00000000	0



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	4E	Vertical Blanking (Tvbp) = xxxx lines (DE Blanking typ. for DE only panels)	19	00011001	25
	4F	Vertical Active : Vertical Blanking (Tvbp) (upper 4:4 bits)	30	00110000	48
	50	Horizontal Sync, Offset (Thfp) = xxxx pixels	30	00110000	48
	51	Horizontal Sync, Pulse Width = xxxx pixels	20	00100000	32
	52	Vertical Sync, Offset (Tvfp) = xx lines Sync Width = xx lines	36	00110110	54
	53	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000	0
	54	Horizontal Image Size =xxx mm	25	00100101	37
	55	Vertical image Size = xxx mm	A4	10100100	164
	56	Horizontal Image Size / Vertical image size	10	00010000	16
	57	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000	0
	58	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000	0
	59	Bit[7] 0: Non-interlace, 1: Interlace Bit[6:5] 00: Normal display, no strero, see VESA EDID Spec 1.3 Bit[4:3] 00: Analog composite, 01: Bipolar analog composite, 10: Digital composite, 11: Digital separate Bit[2:1] : The int	1A	00011010	26
Timing Descriptor #3 Dell specific information	5A	Flag	00	00000000	0
	5B	Flag	00	00000000	0
	5C	Flag	00	00000000	0
	5D	Data Type Tag: Alphanumeric Data String (ASCII) ==> fix=FE	FE	11111110	254
	5E	Flag	00	00000000	0
	5F	Dell P/N 1st Character	58	01011000	88
	60	Dell P/N 2nd Character	58	01011000	88
	61	Dell P/N 3rd Character	33	00110011	51
	62	Dell P/N 4th Character	31	00110001	49
	63	Dell P/N 5th Character	47	01000111	71
	64	EDID Revision Bit[6:0] See charts below Bit[7] 0: X-rev, 1: A-rev	80	10000000	128
	65	Manufacturer P/N	42	01000010	66
	66	Manufacturer P/N	31	00110001	49
	67	Manufacturer P/N	33	00110011	51
	68	Manufacturer P/N	33	00110011	51
	69	Manufacturer P/N	58	01011000	88
Timing Descriptor #4	6A	Manufacturer P/N	57	01010111	87
	6B	Manufacturer P/N (If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	31	00110001	49
	6C	Flag	00	00000000	0
	6D	Flag	00	00000000	0
	6E	Flag	00	00000000	0
	6F	Data Type Tag: Manufacturer Specified Data 00 ==>fix=00	00	00000000	0
	70	Flag	00	00000000	0
	71	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	72	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	73	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	74	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0



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	75	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	76	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	77	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	78	SMBUS Value = ?? Nits ==> fix=00(for M09)	00	00000000	0
	79	Bit[1:0] 00: reserved, 01: single LVDS, 10: dual LVDS, 11: reserved Bit[2] 0: No RTC support, 1: RTC support Bit[7:3] Reserved	01	00000001	1
	7A	Bit[0] 0: No BIST support, 1: BIST support Bit[7:1] Reserved	01	00000001	1
	7B	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	0A	00001010	10
	7C	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000	32
	7D	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000	32
Checksum	7E	Extension flag (# of optional 128 EDID extension blocks to follow, Typ = 0)	00	00000000	0
	7F	Checksum (The 1-byte sum of all 128 bytes in this EDID block shall = 0)	76	01110110	118